



TEA
THE Energy Authority

2022 PROGRESS REPORT
TO THE
2020 INTEGRATED
RESOURCE PLAN

PREPARED FOR
FRANKLIN PUBLIC
UTILITY DISTRICT



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SECTION 1: OVERVIEW

BACKGROUND

Public Utility District No. 1 of Franklin County (Franklin PUD) is required by Washington State law, Chapter 19.280 of the Revised Code of Washington (RCW), to develop “a comprehensive resource plan that explains the mix of generation and demand-side resources it plans to use to meet its customers’ electricity needs in both the long term and the short term.” The law stipulates that Franklin PUD produce a comprehensive plan every four years and provide an update to that plan every two years. The Integrated Resource Plan (IRP) analysis must include a range of load forecasts over a ten-year time horizon; an assessment of feasible conservation and efficiency resources; an assessment of supply-side generation resources; an economic appraisal of renewable and non-renewable resources; a preferred plan for meeting the utility’s requirements; and a formal action plan. The Board adopted Franklin PUD’s 2020 IRP in August 2020.

The 2020 IRP analysis showed that the District’s existing long-term Bonneville Power Administration (BPA) power supply contract, and its other owned and contracted resources, can provide enough energy to meet its forecast need on an average annual basis through 2030. The 2020 IRP also identified a strategy to meet the short- and long-term electricity needs of Franklin PUD customers and Washington State renewable portfolio standard (RPS) obligations for the 2020 through 2030 study period. The preferred portfolio included relying on market purchases for any short-term capacity deficits and procuring renewable energy credits (RECs) to address a projected shortfall in renewable portfolio standard compliant generation beginning in 2025.

The 2022 Progress Report reviewed the changing conditions in the wholesale energy market and planning environments as well as Franklin PUD’s progress against its strategy and formal action plan since the 2020 IRP was adopted. This Progress Report is consistent with the State of Washington’s regulatory requirements (RCW 19.280.030).

THE DISTRICT



Franklin PUD (or “the District”) provides electric service to approximately 27,180 residential, commercial, industrial, and street lighting customers countywide. The District purchases most of its wholesale power from the Bonneville Power Administration (BPA) at cost, through the long-term Slice and Block Power Sales Agreement. Most of the BPA power supply comes from the Federal Columbia River Power System (FCRPS) hydroelectric projects. BPA also markets the output of the Columbia Generating System (nuclear plant) near Richland, WA, and makes miscellaneous energy purchases on the open market.

The District augments its remaining energy and capacity requirements primarily through contracts for portions of the Nine Creek and White Creek Wind projects and the Packwood Lake and the Esquatzel Canal Hydroelectric generating facilities. In addition, a contract for 30 MW of capacity from the Frederickson 1 combined cycle generating will expire on August 31, 2022.

2022 PROGRESS REPORT APPROACH

The District performed the following steps in developing this Progress Report:

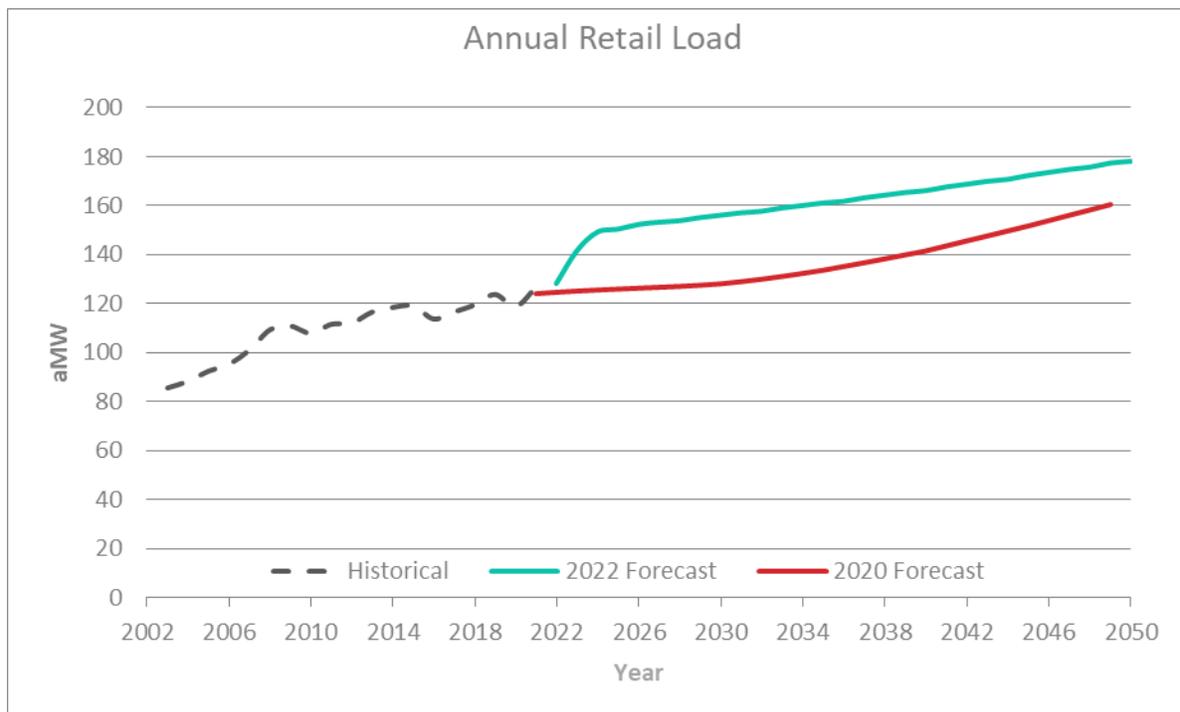
- Updated the District’s load forecast for comparison with the forecast used in the 2020 IRP (includes new conservation assumptions from the 2021 Conservation Potential Assessment (CPA));
- Updated the market price projection utilizing Energy Exemplar’s AURORA electric forecasting and analysis software;
- Reviewed supply resource cost and performance assumptions; and
- Assessed the District’s progress against items in the 2020 IRP Action Plan.

SECTION 2: CHANGING CONDITIONS

The District’s load forecast was updated in June 2022 and varies significantly from the base case forecast completed for the 2020 IRP, largely due to several new commercial customers which are expected to come online in the next couple of years. Whereas in the 2020 forecast, load was only anticipated to hit 150 aMW by the year 2044, the 2022 forecast now projects average annual load will reach that same level in 2025—nearly 20 years earlier. The 2022 base case scenario for ten-year load and customer forecast projects an average annual rate of growth (AARG) of 2.20% for retail load, compared to the 0.28% AARG forecast in 2020.

The 2022 load forecast is based on an econometric load forecasting methodology. This long-term model employs historical load data and expected economic trends to establish the relationship between energy consumption and economic variables. The District’s peak energy usage historically occurs during the summer months of June, July, and August as a direct result of agriculture-related irrigation that applies water to crops during the seasonally warm growing season during the summer.

Figure 1

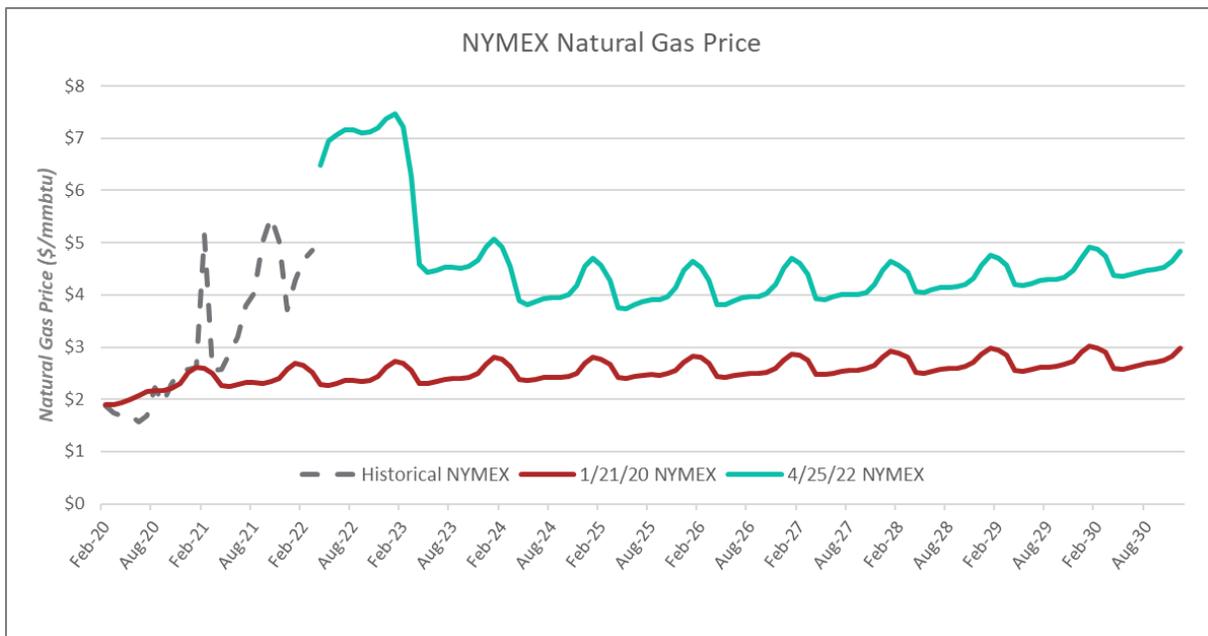


NATURAL GAS PRICE FORECAST

Commodity costs, supply chain issues, and the rate of inflation all have risen considerably since the 2020 IRP study was developed. The price forecast for natural gas is a key planning component as dispatchable natural gas-fired internal combustion engines and combustion turbines in simple and combined cycle configurations are competing in the near term with variable output renewable resources such as wind and solar for inclusion in utility resource plans.

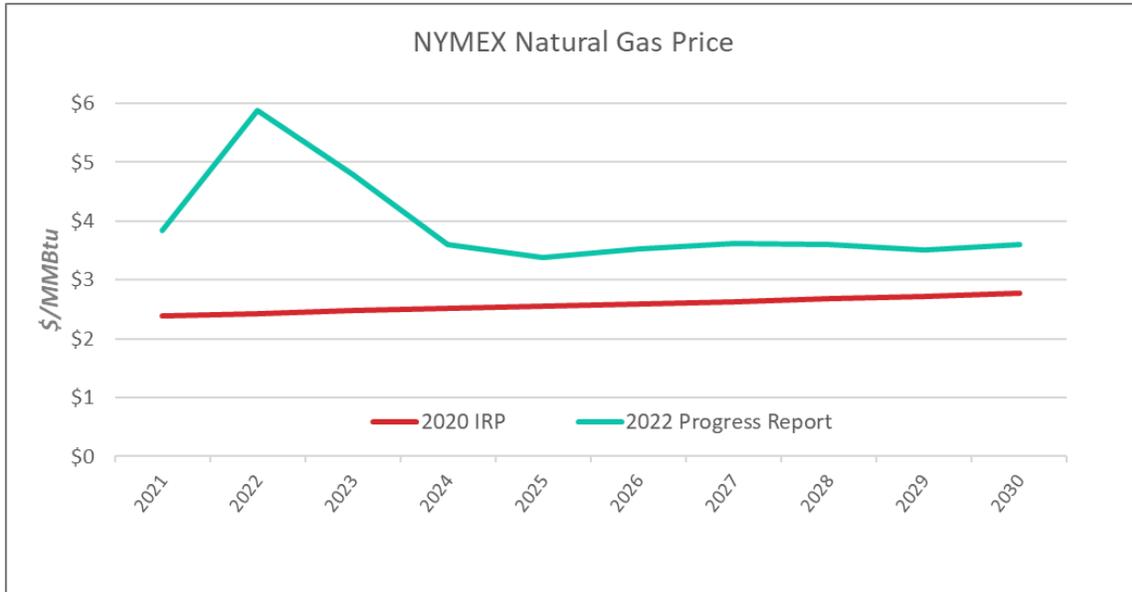
In the 2020 IRP, the January 21, 2020 NYMEX natural gas curve was the basis for future natural gas prices (black line in Figure 2). As of April 25, 2022 when this Progress Report was being developed, NYMEX pricing for natural gas had increased over \$4.50/mmBtu for the May 2022 through March 2023 period, and an average of \$1.71/mmBtu for the April 2023 through December 2030 period.

Figure 2



Natural gas price forecasts developed by S&P Global Platts and Wood Mackenzie are based on supply and demand balances resulting from the analysis of market fundamentals. Both entities expect the current high oil and gas prices will ultimately cause more supply to come back to the market, reduce the current gas storage deficit, and reduce Henry Hub prices after the winter of 2022-23. The price forecast below (Figure 3) is based on these recent forecasts and was used as an input to the Aurora market price forecast for the 2022 Progress Report. The updated curve for 2022 is nearly \$3.50/mmBtu higher than the 2020 IRP assumption. The difference narrows to an average of approximately \$0.90/mmBtu between the years of 2024 and 2030.

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Figure 3



MARKET PRICE FORECAST

An updated electricity price simulation was conducted for this Progress Report using the same tool—Energy Exemplar’s Aurora forecasting software—to simulate the supply and demand fundamentals of the physical power market, to produce a long-term power price forecast. Using factors such as the economic and performance characteristics of supply resources, regional demand, and zonal transmission constraints, Aurora simulates the Western Electricity Coordinating Council (WECC) system to determine an adequate generation portfolio, constrained by the limitations of the transmission network, to serve load. The model simulates resource commitment and dispatch which is used to create capacity expansion and long-term price forecasts.

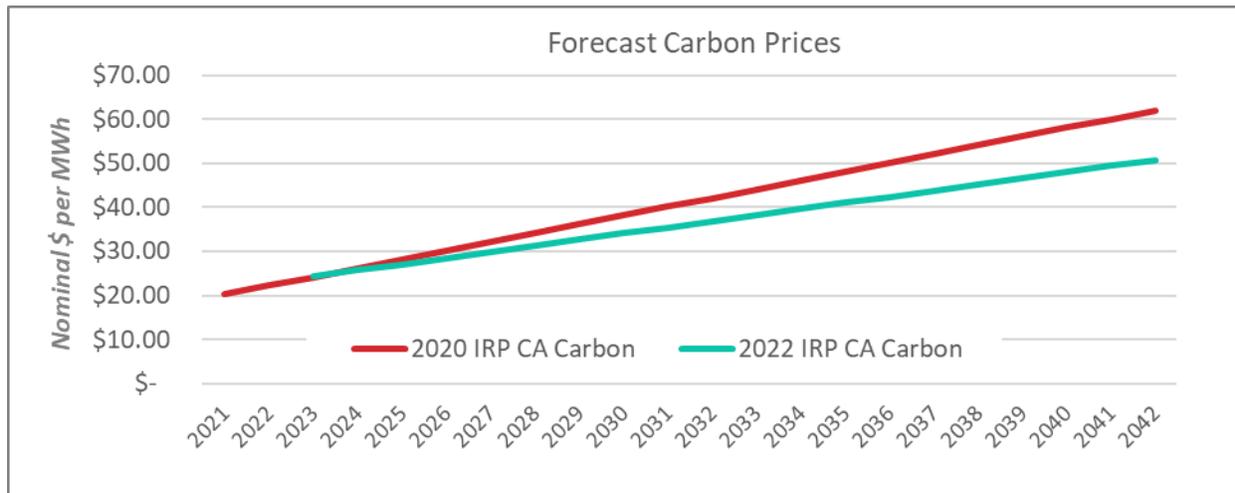
The main changes in assumptions for model inputs for the 2022 Progress Report are primarily twofold: higher natural gas prices and the implementation of carbon pricing in Washington State for the Production Cost Model Aurora run. For the 2020 IRP, the social cost of carbon was already applied during the Capacity Expansion Aurora run to develop a new resource stack to satisfy a provision of the 2019 Clean Energy Transformation Act (CETA) requiring utilities to consider the social cost of carbon in resource planning, evaluation, and selection. The values provided by the Washington State Department of Commerce for the social cost of carbon are summarized in Figure 4 below. The new resource stack from the Capacity Expansion run was then fed into a Long-Term Production Cost Model run with the social cost of carbon removed, since the social cost of carbon is not considered in actual daily commitment and dispatch decisions.

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Figure 4

Year in Which Emissions Occur or Are Avoided	Social Cost of Carbon Dioxide (in 2007 dollars per metric ton)	Social Cost of Carbon Dioxide (in 2018 dollars per metric ton)
2020	\$62	\$74
2025	\$68	\$81
2030	\$73	\$87
2035	\$78	\$93
2040	\$84	\$100
2045	\$89	\$106
2050	\$95	\$113

With the passage of the Climate Commitment Act (CCA) in 2021 in Washington State that takes effective in 2023, a carbon market is expected to develop. While much is still unknown regarding how the CCA will operate, including pricing, the 2022 price forecast assumed carbon prices in Washington would approximate California carbon prices. Current thinking is that at some future period there may be linkage between the Washington, Oregon, and California programs. The carbon price assumptions used in the 2020 and 2022 IRP market price forecast are summarized in Figure 5 below.

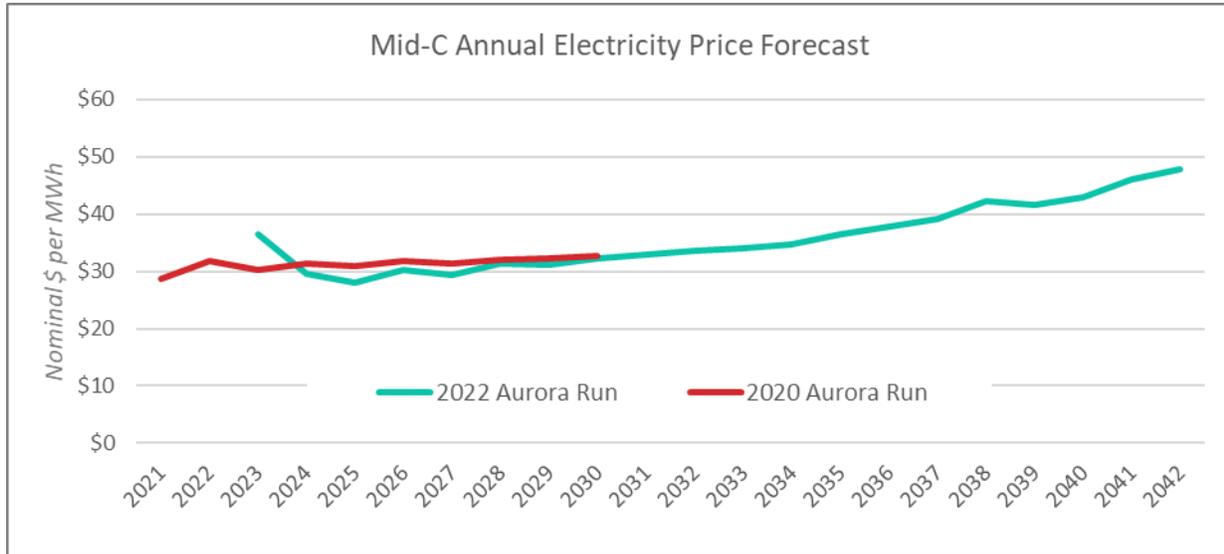
Figure 5



The 2020 IRP market price forecast covered the 2021 through 2030 period, while the market price forecast for the 2022 Progress Report is for the 2023 through 2042 period. Forecast results are comparable with the largest difference stemming from notably higher natural gas prices forecast for 2023. Recent higher natural gas prices (since Spring 2022) have had a direct impact on the market price forecast results for the first year of the 2022 Progress study period (2023). Prices then stabilize and remain within a couple of dollars for the rest of the mutual years of the two study periods (2024 through 2030).

The relatively minor change in the market price forecast since 2020 (Figure 6) can be largely explained by the fact that hydroelectric generation remains the dominant resource in the Pacific Northwest, and with the renewable resource buildout similar in the two market price forecast studies, hydro is often the marginal unit; therefore, the higher gas prices have limited impact on the overall energy price stream. The Aurora market price forecast is the result of a long-term capacity expansion model based upon market fundamental assumptions. As such, it does not consider the risk of extreme capacity events, nor does it apply a risk premium or energy price volatility over the study period unlike the actual forward curve.

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Figure 6



RENEWABLE RESOURCE OPTIONS

The District’s 2020 IRP considered a broad list of options to meet future energy, capacity and RPS needs. Candidate portfolios included renewables such as solar and wind - with and without energy storage and biomass. The cost of energy from wind and solar resources has experienced a steady and dramatic decline over the past 15 years, in large part due to federal tax incentives. Declining costs for solar and wind resources along with the clean energy mandates and societal desire to reduce carbon emissions has furthered the shift from the siting of facilities utilizing fossil-fuels for power generation and grid stability to an increased reliance on carbon-free renewable resources. Industry consensus at the time of the 2020 IRP was that the cost of renewables and energy storage systems would continue to decline for the foreseeable future.

The recent increase in the cost of natural gas would normally be expected to further improve the competitiveness of renewable resources; however, in this high inflationary environment, the steady downward trend in renewable costs suddenly reversed in 2021 due to rising development costs, shipment delays, and market uncertainty. LevelTen Energy reported that first quarter 2022 domestic prices for renewable purchased power agreements were almost 30 percent higher than those of the first quarter of 2021.¹

The timely development and availability of new solar and wind projects has likely been delayed to at least the mid-2020s as supply chain and equipment delays continue to restrict project development. Despite the growing number of projects that are backlogged and the cost increases in renewable projects, domestic utilities and their communities are continuing to prioritize renewable resources as a vital component in the drive to carbon free power production.

¹ <https://www.leveltenenergy.com/post/leveltens-q1-2022-ppa-price-index-now-available-for-purchase>

DISPATCHABLE RESOURCE OPTIONS

The District’s 2020 IRP also evaluated dispatchable resources and how they might be used to meet future energy, capacity, and RPS needs. Dispatchable resources are those that can be turned on and off at the direction of the grid operator. The ability of dispatchable generating resources to follow load is vital for reliable and uninterrupted electric service given that the development of utility scale energy storage has yet to reach technological maturity. Dispatchable options evaluated by the District included reciprocating internal combustion engines and natural gas-fired combustion turbines in simple and combined cycle operation.

In addition to generating units utilizing natural gas or landfill gas, the District is also actively monitoring developments in nuclear generation in the form of new small modular reactors (SMRs). The District and its customers benefit from the clean and reliable output of the Columbia Generating Station nuclear plant and recognize the potential this new class of nuclear generation offers the District and others in the region to meet carbon free power requirements by 2045. An initial domestic SMR project that may be of interest to Pacific Northwest utilities, is the Utah Associated Municipal Power Systems’ (UAMPS) Carbon Free Power Project based on NuScale’s modular light water reactor design. The project has the financial backing of the US Department of Energy (DOE) and is to be located at the DOE’s Idaho National Laboratory in Idaho Falls. Since the adoption of the District’s 2020 IRP, the SMR project was downsized in 2021 from twelve to six SMRs each with an individual nameplate capacity of 77 MW. Initial power output is expected by 2029.

Dispatchable resources have also experienced cost increases. The District will continue to monitor the capital and operating costs associated with a variety of resources and update in the 2024 IRP analysis.

ENERGY STORAGE AND DISTRIBUTED ENERGY RESOURCES

Washington state’s economy-wide transition to reducing emissions and serving customers with carbon free electric generation may require some utilities to consider an investment in energy storage and distributed energy resources.

Energy storage is proving effective in integrating wind and solar to the electric grid, since this technology can “collect” or store electricity when demand or prices are low, and “discharge” or supply energy in periods when demand or market prices are higher. Battery storage costs have declined over the past decade, allowing this technology to begin to dominate the energy storage market. At the time of the 2020 IRP analysis, battery storage was not considered cost effective.

Distributed Energy Resources (DERs) are utility or customer-owned generation located within the utility’s service area, and typically interconnected to the utility’s electrical distribution system. Growth of DERs in the U.S. has also temporarily slowed due to the pandemic, supply chain issues, and high inflation. In 2020, Wood Mackenzie (WM) forecast that annual DER additions would not exceed 2019 levels until 2024. Despite recent challenges, the siting of DERs and the DER industry as a whole is expected to continue to evolve at a rapid pace.

TRANSMISSION SERVICE

A robust transmission network is vital to support deliveries of wholesale power to load. BPA continues to expect the transmission system to serve expected loads and load growth for at least the next ten years based on

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forecasts with the addition of specified transmission upgrades detailed in its transmission plans.² The forecast peak loads, plus existing long-term firm transmission service obligations, are used to determine system reinforcement requirements for reliability. BPA plans the system in accordance with North American Electric Reliability Corporation (NERC) Planning Standards and WECC Regional Criteria to maintain system reliability.

OVERSUPPLY MANAGEMENT PROTOCOL

The District operates its electrical distribution system within the BPA Balancing Authority Area. As such, BPA has the responsibility for managing the moment-to-moment changes in loads and resources to preserve reliability on the power grid. BPA mitigates overgeneration conditions on a regional basis through its Oversupply Management Protocol. This may include BPA displacing non-hydro generation to maintain system reliability. The District is subject to BPA’s Oversupply Management Protocol and pays the oversupply rate it is assessed through its power rates.

RESOURCE ADEQUACY

Customer demand for electricity is inherently variable due to volatility in weather, markets, socioeconomic trends, and other factors. The District incorporated a planning reserve margin in the 2020 IPR analysis for candidate portfolios to ensure capability to meet peak needs over the study period.

How to meet electric demand variations and ensure sufficient generating capability is available to meet forecast regional peak demand during a period of dramatic transition in the region’s resource mix was initiated by members of the Western Power Pool (WPP, formerly Northwest Power Pool) in 2019. This led to a cooperative process to address regional resource adequacy under a common set of planning standards and program design details through what is now called the Western Resource Adequacy Program (WRAP) initiative.



In October 2021, Franklin PUD, through its partnership with TEA and six other consumer-owned utilities (Benton PUD, Clark Public Utilities, Emerald People’s Utility District, Cowlitz PUD, Grays Harbor PUD, and Lewis County PUD) elected to participate in the non-binding phase of the WRAP (October 2021 through December 2022). TEA’s participation in the WRAP is as the Load Responsible Entity (LRE), responsible for aggregating the loads and resources of the seven listed PUDs.

Program participation in the current phase included data submittals and planning and adequacy demonstrations for the Winter 2022/23 and Summer 2023 seasons. The District has gained valuable insights through this participation that will help inform its mid- and long-term planning standards and future resource portfolio evaluations.

² BPA’s transmission planning process considers forecast regional peak loads and existing long-term firm transmission service obligations to determine system reinforcement requirements for ensuring grid reliability. BPA plans the transmission system in accordance with NERC Planning Standards and WECC Regional Criterion to maintain system reliability.

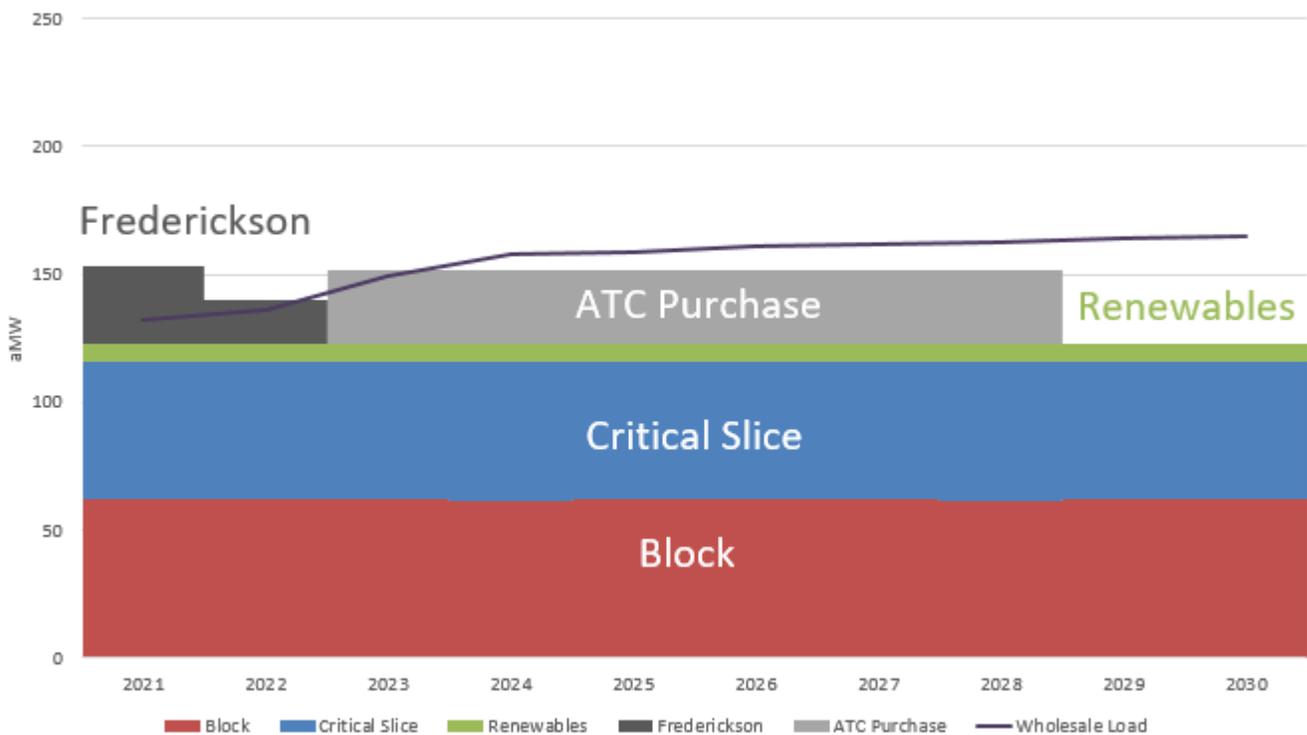
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2020 IRP RESOURCE STRATEGY

In accordance with Washington state law, the District completed its integrated resource plan based on a thorough examination of its ten-year load and resource balance forecast, Washington State renewable portfolio standards, and long-term wholesale energy price forecasts developed in 2020. The plan: identified the District has sufficient annual energy through 2029 to meet its customer demand under expected or average hydro conditions; projected a shortfall in renewable portfolio standard compliance beginning in 2025; and noted summer and winter capacity deficits as an item to be closely monitored.

The 2020 IRP studied the 2020-2030 planning horizon and showed that under critical or adverse hydro conditions, the District’s existing BPA and non-BPA supply resources are expected to provide enough energy to remain in load/resource balance on an average annual basis through 2024. With load growth since the 2020 IRP, the 2022 Progress Report notes that the District remains in load/resource balance through 2023 as shown in Figure 7.

Figure 7



The District can experience significant seasonal and daily customer demand variations due to temperature changes. During certain times in the winter and summer periods - depending on the temperature - the hourly load or customer demand can exceed the District’s contracted generating capacity. In such cases the District supplements with short-term purchases from the wholesale energy market.

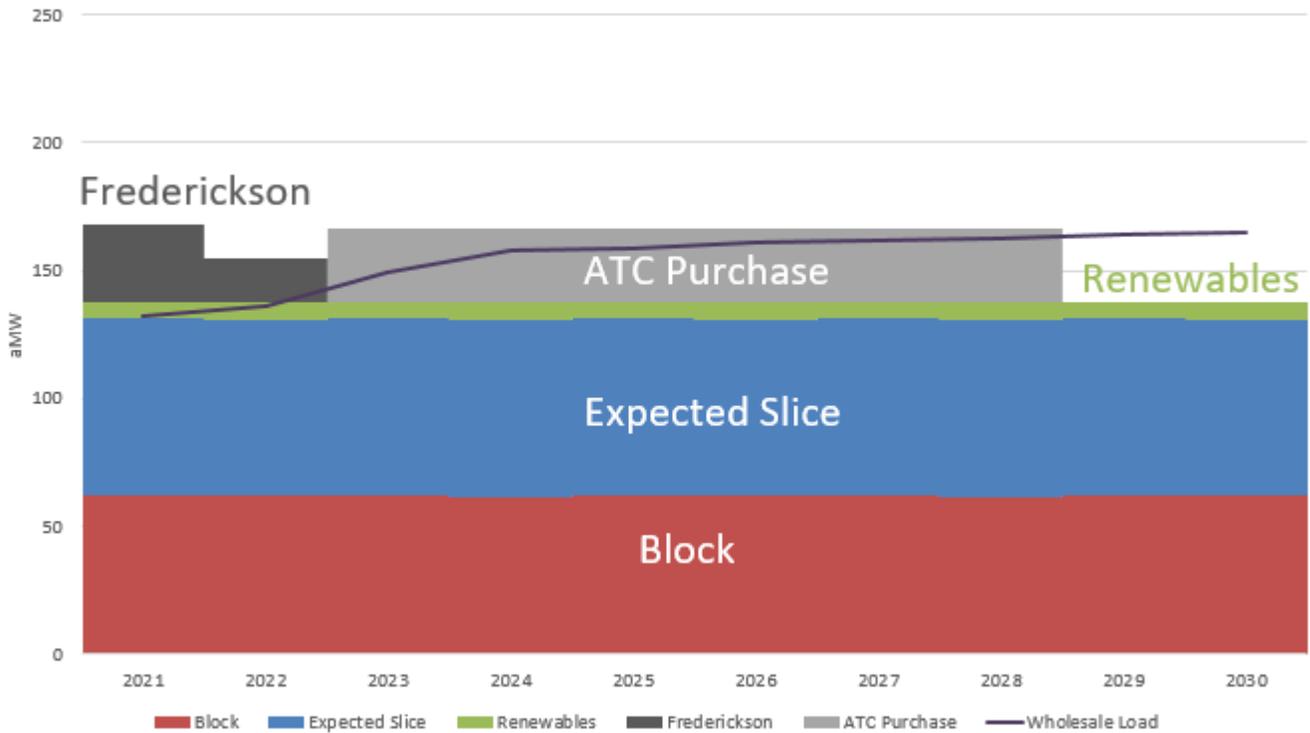
The 2020 IRP provided a preferred portfolio of resources and strategy for meeting future energy and capacity needs. The portfolio identified in the 2020 IRP that will produce the lowest cost and risk (due to District hedging practice) consists of utilizing the wholesale energy market to meet any future energy and capacity deficits. The benefit of this approach was that the District can target the parts of the year that present the most challenges (winter) while avoiding carrying costs of physical assets during periods of lower risk (spring and fall). Since the

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District had no energy deficits forecast through the duration of the study period, there was no compelling reason to procure additional generating assets at that time.

For the 2022 Progress Report, Figure 8 shows that under expected or average hydro conditions, the District has no annual energy needs until 2029.

Figure 8

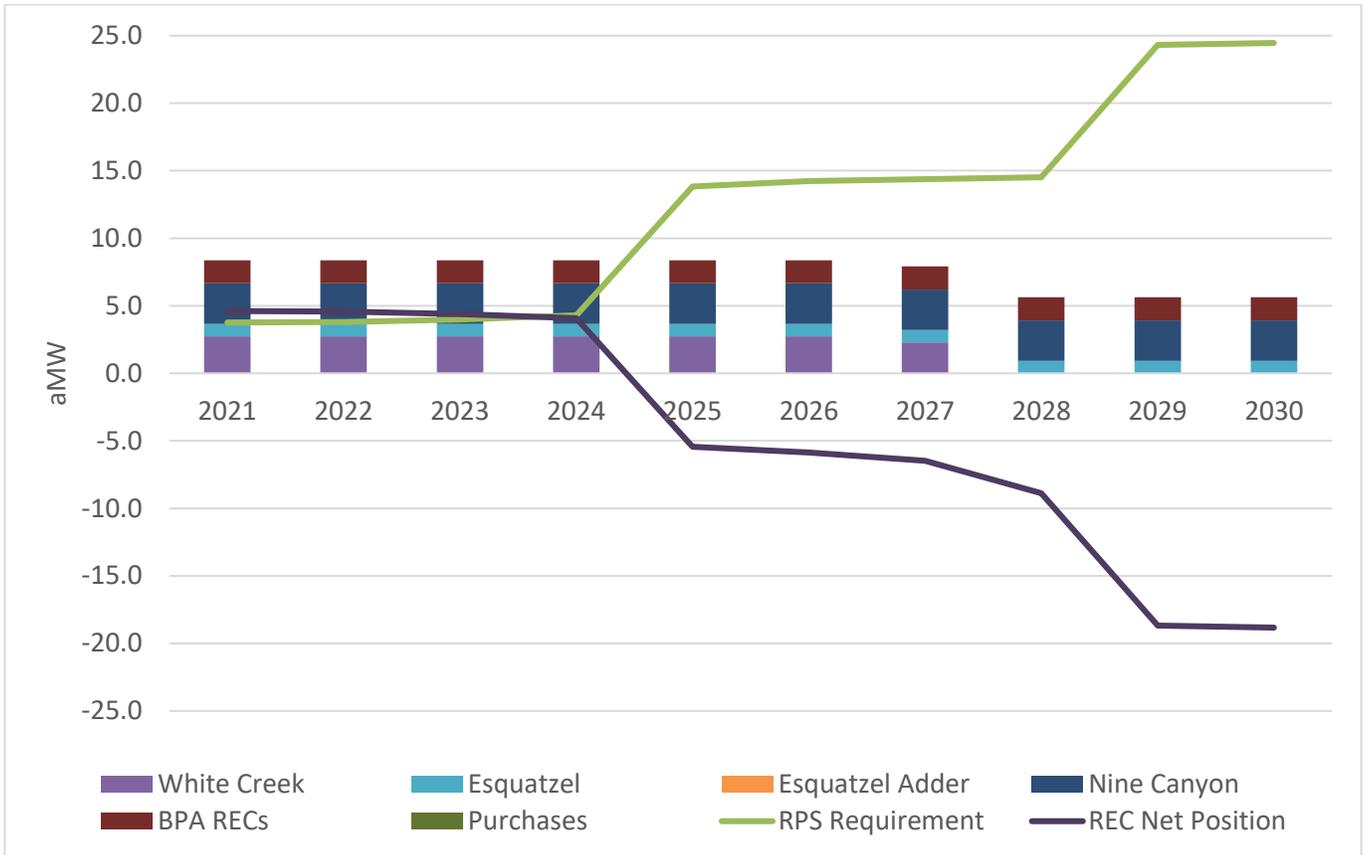


RENEWABLE PORTFOLIO STANDARD (RPS) COMPLIANCE

The District must meet renewable portfolio standard obligations to remain in compliance with the Washington State Energy Independence Act (I-937). The District was exempt from RPS requirements until it exceeded 25,000 customers in 2016. The District’s first compliance mandate of 3 percent began in 2020. The RPS will ramp up to 9 percent in 2024 and ultimately to 15 percent in 2028. The 2020 IRP indicated the District has sufficient renewable energy credits (RECs) to comply through 2024. The District has retained a bank or inventory of RECs for its future compliance use, making new resource or REC purchases not immediately necessary.

Once the District has exhausted its REC bank, it will need to acquire additional RECs to maintain its increasing RPS compliance. Consistent with the 2020 IRP Action Plan Item #1.b., the District will meet its RPS requirements by executing new REC purchase contracts to fill any deficits. Figure 9 shows the District can meet its RPS requirement through 2024, based on the revised 2022 load forecast, after new conservation savings.

Figure 9



ADDITIONAL REGULATORY REQUIREMENTS

1. CLEAN ENERGY TRANSFORMATION ACT (CETA)

In 2019, the Washington Clean Energy Transformation Act (CETA, RCW 19.405) formalized the pathway to a clean energy future and added requirements for resource planning (RCW 19.280). These additions included: an assessment and forecast of the availability of regional generation and transmission capacity on which the utility may rely to deliver electricity to its customers; a determination of a resource adequacy metric; a forecast of distributed energy resources installed by customers; assessments of energy and non-energy benefits and reduction of burdens to vulnerable populations and highly impacted communities; long-term and short-term public health and environmental benefits; costs and risk and energy security; and a ten-year Clean Energy Action Plan (CEAP). The purpose of the CEAP is to identify the likely action over the next ten years to meet the goals of CETA. An update to the 2020 IRP Action Plan is provided above and a detailed CEAP will be developed during the 2024 IRP process, which will provide greater perspective on the District’s pathway to meeting its CETA requirements.

CETA also required the District to prepare a Clean Energy Implementation Plan (CEIP) by January 1, 2022 (detailed in RCW 19.405.060) that:

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- Propose interim targets for meeting CETA’s standards for greenhouse gas neutral electricity in 2030 and clean energy in 2045
- Identify specific targets for energy efficiency, demand response, and renewable energy
- Identify specific actions for meeting the interim targets and specific actions described above
- Ensure that all customers benefit from the transition to clean energy

The District’s first CEIP, filed January 1, 2022, reported that renewable and non-emitting resources are forecast to serve approximately 97% of annual retail load for the 2022 through 2025 period.

2. CLIMATE COMMITMENT ACT (CCA)

During the 2021 legislative session, Washington State passed the CCA. This legislation established a cap-and-trade program to reduce emissions economy-wide in Washington State beginning on January 1, 2023. The goal of the program is to achieve state emissions reductions to 70% of 1990 levels by 2040. The specific program mechanisms for the allocation and distribution of no-cost allowances and other compliance details are making their way through the Department of Ecology rulemaking process. The District will have a better sense of how to model impacts associated with incremental portfolio emissions and carbon allowances in future IRP updates.

3. PUBLIC UTILITY REGULATORY POLICIES ACT OF 1978 (PURPA)

The 2021 Infrastructure Investment and Jobs Act (IIJA) amends PURPA to add two new “must consider” provisions, relating to (1) demand response practices; and (2) electric vehicle charging programs. The IIJA requires states and nonregulated electric utilities to commence consideration of these standards no later than November 15, 2022, and this consideration must be concluded and a determination as to whether to adopt each standard made by November 15, 2023. The District will monitor these changes and include any additional regulatory requirements in the next IRP update.

PROGRESS AGAINST 2020 IRP ACTION ITEMS

The District’s 2020 IRP included an action plan that addresses both resource acquisitions and power supply related issues. The following is the progress to date for each of these action items:

- 1. The preferred portfolio to meet energy and REC requirements is to continue to make purchases from the market in the short-to-intermediate term. The District will continue to monitor market conditions to track any significant changes in regional resource sufficiency.**
 - a. Energy requirements should continue to be met using the 3-year purchase/sale window used by the RMC.**
 - *The District’s Risk Management Committee (RMC) convenes monthly to review its power supply portfolio, load resource balance, hedges, and price risk for a rolling 36-month period. Each month market fundamentals, forward market prices, hydrological conditions, procurement strategies and hedging recommendations are reviewed and discussed. With formal RMC approval, said strategies to balance the District’s load and resources, fill seasonal energy deficits and sell energy surpluses are executed in a systematic fashion by TEA.*

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- b. RPS requirements will be met by executing new Renewable Energy Credit (REC) purchase contracts once deficits begin to appear. The District has banked RECs for future compliance use, however, the IRP did not assess when the existing REC bank will be exhausted.**

 - *In accordance with the Washington Energy Independence Act (EIA or I-937) requirements, an electric utility that serves 25,000 customers before December 2006 becomes a qualified utility and must meet an increasing percentage of its total annual retail load with certain eligible renewable resources by dates established in RCW 19.285.040 (3% by Jan 2012, 9% by Jan 2016, 15% by Jan 2020).*
 - *For electric utilities who reach 25,000 customers at a later time, the statute still applies to serve an increasing percentage of total annual load with certain eligible renewable resources, at the same time increment. The District reached the total number of customers on January 1, 2016 and therefore must serve at least 3% of its total annual retail customer demand by January 2022, 9% by January 2026, and 15% by January 2030.*

- c. The District will investigate alternative approaches for risk simulation analysis to account for peak loads and capacity needs consistent with the requirements of the NWPP regional RA initiative. This approach should be identified by 9/1/2021.**

 - *During 2021, the District expressed a review of the standard long-term utility planning processes and had discussions on realigning the approach given regional resource adequacy planning discussions. The result of TEA’s review has been the development of a multiple step process to assess loads and resources at an hourly level across the IRP study period to determine the magnitude, duration and frequency of the utility’s resource needs within a month, by season, across the planning horizon. Modeling at this level of granularity will provide greater insights into monthly and seasonal peak capacity needs, and potentially inform resource adequacy and other useful planning metrics. An improved resource screening methodology will also assess the contribution of new resources or energy storage to serving identified peak needs and the associated cost and benefit to the utility’s portfolio for that contribution.*

- d. The District will analyze the impacts of the CAISO’s proposed Enhanced Day Ahead Market (EDAM) on the recommendation to use the market as the preferred portfolio to meet energy needs.**

 - *The CAISO’s proposed Enhanced Day Ahead Market (EDAM) had been moving slowly and seemed to stall/halt when the pandemic hit in early 2020. A summer heat event followed in California in August 2020 creating reliability events, and in early 2021 the effort began to gain renewed focus and momentum. With this lull in advancement, Southwest Power Pool (SPP) introduced a Markets Plus concept that has rallied some interest and while both day ahead markets are being discussed in the region, it is not clear which approach may prevail. While market liquidity for bilateral transactions in the Northwest wholesale electricity markets*
 - *is a legitimate concern, currently governance issues associated with any CAISO enhanced market initiative must be addressed. The District will continue to monitor and stay apprised of evolving markets through its participation in Public Generation Pool and through TEA.*

- e. If significant new industrial load (greater than 10 MW) commits to the District’s service territory, prepare a report that analyzes the impacts on energy purchases and transmission infrastructure.**

 - *No significant new industrial load greater than 10 MW has committed to the District’s service territory since the 2020 IRP was completed. If a significant load commitment is made within the District’s service territory, the District will prepare a report that analyzes the impact. Consistent with prudent*

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utility practice, the District periodically studies and evaluates its critical infrastructure to ensure reliable electric service to its customers.

2. **Assuming more will be known about the post 2028 BPA product offering, budget for and prepare a study in 2021 that examines:**
 - a. **Scenarios of BPA supply of energy, capacity, and non-emitting attributes.**
 - b. **Include various changes in the BPA resource, BPA augmentation, and regional loads placing Net Requirements on BPA.**
 - *The District continues to participate and engage in regional discussions with BPA regarding post-2028 BPA product offerings, product enhancements and various policy determinations. Public power delivered a Conceptual Framework document to BPA in March 2022 and anticipates BPA publishing their Provider of Choice Concept and Product offerings whitepaper to customers in Fall 2022.*

3. **The District will continue to monitor the regulatory environment and modify its resource strategy as necessary.**
 - a. **The District will closely monitor CETA rulemaking for impacts to this action plan.**
 - *District staff engaged in CETA rulemaking through 2020 and 2021. During 2021 the Climate Commitment Act (CCA) was passed which enacts a Cap-and-Invest program to reduce emissions economy wide in Washington state beginning on January 1, 2023.*
 - *Both mandates include numerous reporting and compliance obligations for the District and have made changes to requirements within the IRP process. Since rulemaking for both CETA and CCA are expected to continue through 2022, staff will continue participate and note impacts and requirements in the 2024 comprehensive IRP.*

4. **The IRP continues to identify the District’s summer/winter capacity deficits as an item to closely monitor as the region’s coal plants are retired.**
 - a. **Actively monitor the NWPP RA program development.**
 - *The District announced its participation in October 2021 in the Northwest Power Pool’s Western Resource Adequacy Program (WRAP) through The Energy Authority (TEA), in partnership with six other consumer-owned utilities: Clark Public Utilities, Cowlitz PUD, Emerald People’s Utility District, Benton PUD, Grays Harbor PUD, and Lewis County PUD. TEA’s participation in the WRAP is as the Load Responsible Entity (LRE), responsible for aggregating the loads and resources of the seven listed PUDs. Program participation in the current phase includes data submittals and planning and adequacy demonstrations for the Winter 2022/23 and Summer 2023 seasons. The District is also represented through TEA’s participation as LRE on the WRAP’s Operating and Participants committees and some of the program task forces.*
 - *The District expects its participation will provide valuable insights and help inform as mid- and long-term resource portfolio investment evaluations and decisions, including the next BPA Power Sales Agreement in the post-2028 period.*

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b. Develop a white paper that describes a process for determining a Levelized Cost of Capacity for use in the 2022 IRP process. Complete by Aug-2021.

- *Since 2022 is a progress report, this white paper will be developed prior to the 2024 IRP.*
- *See Section 4 for future IRP planning approach (for 2024 comprehensive IRP)*

c. Monitor the Council’s LOLP studies and consider longer term resource acquisition for future periods:

i) Monitor the cost and availability of regional developments of pumped hydro storage, solar plus storage, and standalone battery storage.

- *As part of resource planning efforts, District staff regularly refresh cost and availability information on regional resource development (e.g., Montana wind resources, solar plus storage, community solar and battery projects, etc.).*
- *As part of its comprehensive 2024 IRP analysis, using a revised long range planning approach and methodology that models loads and resources at an hourly level, will inform the potential value energy storage and demand response technologies can provide the District.*

ii) Explore how to and consider developing a demand response potential assessment and supply curves that could be implemented in synergy with the District’s smart meters as a potential resource for meeting hourly peak loads.

- *The District plans to have full implementation of smart meters in residential, industrial, and commercial areas by year ending 2022.*
- *During 2021, the District completed its demand response potential assessment (DRPA). The DRPA identified leveraging AMI technology and direct load control in the commercial and industrial sectors that may prove both cost effective and achievable for the District to shift demand to other periods, mitigating high or peak demand periods. DR program development requires significant planning for successful implementation and requires customer engagement.*
- *The DRPA results will serve as an input into the comprehensive 2024 IRP effort and help inform Clean Energy Implementation Plan demand response goals for the second compliance period (2026-2029).*

5. Implement all cost-effective conservation consistent with the requirements and any future amendments of the EIA. This number was 11.49 aMW over 10 years in the November 2019 Conservation Potential Assessment but will continue to evolve as better information becomes available.

- *In May 2019, Washington state passed the Clean Energy Transformation Act (CETA). CETA requires a utility that sells electricity to its retail customers be greenhouse gas neutral by 2030 and 100% carbon free by 2045. Pursuant to CETA, the District completed its first Clean Energy Implementation Plan (CEIP) in 2021 which outlined the District’s targets and actions for the interim 2022 through 2025 period toward achieving key CETA milestones and requirements.*
- *The District’s 2022 CEIP was adopted by the Board of Commissioners in December 2021 and identified interim targets for the percentage of retail load to be served using renewable, non-emitting and demand*

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response resources, and for energy efficiency. The District's CEIP calculated the District's interim energy efficiency target to be 26,980 MWh for the 2022 through 2025 period.

- 6. The District will continue to monitor energy economic fundamentals to ensure that its resource strategy provides rate payers with low cost energy with a low level of risk. Major changes to price and volatility of wholesale electricity, natural gas, and RECs may require changes to the District's plan.**
 - *The District's RMC and power planning staff monitor and evaluate energy economic fundamentals monthly. The analysis to assess whether a change or revision to the District's resource strategy to ensure affordable, low cost and reliable energy for ratepayers will be a fundamental part of the 2023 budget process, and the comprehensive 2024 IRP analysis.*

- 7. The District will continue to take steps to ensure compliance in the 2030-2044 period as well as the 2045 period consistent with prudent utility planning practices. This will include procuring reliable and environmentally compliant assets as the future need arises evaluated in light of the District's relationship with BPA.**
 - *The District achieved conservation savings of 19.17 aMW for 2020. The District conducted a utility-specific CPA during 2021 resulting in a biennial energy efficiency target of 1.61 aMW for the 2022 and 2023 period and 15.47 aMW for the 10-year potential energy efficiency estimate.*

2020 CLEAN ENERGY ACTION PLAN

The District will continue to take steps to ensure compliance with CETA requirements outlined in RCW 19.405.030 through 19.405.050 consistent with prudent utility planning practices. As required under RCW 19.280.030, the following is the District’s Clean Energy Action Plan including the actions that will be taken to meet the CETA requirements.



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1. RCW 19.405.030 – Elimination of coal-fired resources by 12/31/2025
2. RCW 19.405.040 – Greenhouse gas neutral by 1/1/2030 (first compliance period 2030-2033)
3. RCW 19.405.050 – 100% carbon free by 1/1/2045

The law requires utilities to phase out coal-fired electricity from their state portfolios by 2025. By 2030, their portfolios must be greenhouse gas emissions neutral, which means they may use limited amounts of electricity generated from natural gas if it is offset by other actions. By 2045, utilities must supply Washington customers with electricity that is 100% renewable or non-emitting, with no provision for offsets.

CETA requires that each utility develop and adopt a Clean Energy Implementation Plan (CEIP) every four years with the first CEIP due January 1, 2022. In compliance with this requirement, the District adopted its first CEIP on November 9, 2021. The CEIP includes the District’s specific actions during the interim performance period or greenhouse gas neutral compliance period to demonstrate progress toward meeting the standards under RCW 19.405.040(1) and 19.405.050(1) including targets for Energy.

Interim targets: Percentage of retail load to be served using renewable and nonemitting resources (WAC 194-40-200(2))

Resource	2022	2023	2024	2025	4-year Period
Renewable	86%	86%	86%	86%	86%
Nonemitting	11%	11%	11%	11%	11%
Total	97%	97%	97%	97%	97%

³ (source: <https://www.commerce.wa.gov/growing-the-economy/energy/ceta-overview/>)

Specific targets (WAC 194-40-200(3))

Resource	Amount	
Energy Efficiency	26,980	MWh to be acquired over the interim performance period (measured in first-year savings)
Renewable energy	4,029,399	MWh to be used during the interim performance period
Demand response	0	MW to be acquired over the interim performance period

Identify and describe the specific actions the utility will take over the next interim performance period to demonstrate progress toward meeting the utility's interim targets and the 2030 GHG neutral and 2045 clean electricity standard (WAC 194-40-200(1)):

Specific action proposed	Description of how the action demonstrates progress toward meeting interim targets and the standards
Maintain Existing Contracts	Franklin PUD has secured enough renewable and non-emitting power to meet the targets of the interim period.
Renew existing contracts with similar products.	Continue to work with existing sources of renewable and non-emitting power generators to ensure equal or better demonstration of a trend towards meeting CETA targets and goals.
Seek out additional Renewable & Non-emitting generation opportunities	Continue to research and develop partnerships that trend Franklin PUD towards goals and targets set by CETA and other RCW and WAC laws.

SECTION 4: PROGRESS REPORT CONCLUSIONS

2022 IRP PROGRESS REPORT CONCLUSIONS

The goal of an IRP analysis is to provide the framework to evaluate a wide array of supply resources, conservation, and renewable energy credits and how they interact and complement the existing power supply portfolio. The result is a preferred strategy and action plan intended to guide the utility in its approach to managing the District’s portfolio for the future, while preserving reliable, low-cost electricity to the utility’s ratepayers, at a reasonable level of risk.

The District’s 2020 IRP studied the 10-year, 2020 through 2030 planning horizon, and was adopted by the District’s Board of Commissioners in August 2020. This study showed that the District’s existing long-term BPA power supply contract, and its other owned and contracted resources:

1. Provides enough energy to meet forecast customer needs on an average annual basis until 2029;
2. Projects a renewable portfolio standard deficit in compliant generation beginning in 2025; and
3. Identified the potential for growing capacity needs during some months in the summer and winter seasons.

The 2020 analysis also laid out a strategy for meeting the District’s forecast seasonal needs, and Washington State renewable portfolio standard obligations (RPS, I-937). This strategy included relying on the wholesale energy market to address any short-term summer and winter capacity deficits and procuring renewable energy credits (RECs) to address any projected shortfalls in RPS compliance. The benefits of the 2020 IRP strategy allow the District the flexibility to target and procure energy during months of the year that present the most challenges (winter) and to avoid the full carrying costs associated with procuring new generating assets. To date, the compliance REC market has had sufficient availability at prices in the single digits that can be procured to satisfy RPS obligations.

The 2022 Progress Report to the 2020 IRP and review of this strategy, given changing conditions since the 2020 IRP analysis was developed, makes no fundamental changes to the preferred portfolio and strategy.

PLANNING FOR THE FUTURE

In the 2020 IRP, the District identified its preferred portfolio using state-of-the-art software and planning methodologies recognized in the industry as “best practice.” However, as discussed in Section 3, *Additional Regulatory Requirements*, changes to the planning and regulatory environment necessitate evolution of the IRP evaluation framework.

Long-term resource planning has traditionally relied on forecasting average monthly customer demand, with consideration to the average on- and off-peak profile or ‘shape’ of that demand. This approach has been widely used since most Pacific Northwest utility resource portfolios have most of their supply provided by BPA through long-term contracts, and to a lesser extent, utility-owned or contracted-for non-federal resources. While BPA’s marketing of the FCRPS provides PNW public power utilities with low emissions supply portfolios, more recent clean energy and carbon reduction mandates have added additional planning complexities.

For electric utilities in Washington State, renewable portfolio standards, clean energy, and carbon reduction policy goals set forth in I-937 and CETA specify or limit the types of resource options to meet future demand. Future resource options are limited to certain eligible renewable resources and resources with low or zero emissions and energy storage and demand response technologies. The more recent CCA requires emissions reductions economy-wide. The CCA is expected to spur transition of the transportation and process and manufacturing sectors away from fossil fuels to alternative fuels, including electricity, potentially placing new and different customer demands on the electric utility sector.

The District procures most of its power supply through a long-term contract with BPA. The BPA contract provides an allocation of annual energy “at cost,” based on the utility’s forecast average energy need. This can result in the District’s energy portfolio being surplus on an average annual energy basis, and deficit within a given month, a season, or during peak, high-demand periods. Evaluation of new and different resource and energy storage types requires the utility to understand its customers’ demand and load patterns at the hourly level, across a month, and by season.

Further, when considering the utility’s changing demand needs across time, it is important to understand for any potential resource addition, whether its output complements the utility’s existing portfolio and if it can contribute to meeting periods of peak customer demand. Using hourly granularity, certain types of resources or energy storage options can be more equitably analyzed for the value and contribution they make to serve any period of forecast deficit. For example, wind and solar energy production can vary across the hours of the day and during certain months of the year. Energy storage technologies and demand response programs shift demand from one period to another across a day. This requires the cost of energy for a contemplated resource addition be considered, and any value(s) attributable to how the resource: 1) interacts with the existing portfolio; 2) can be dispatched (turned on when needed most or turned off when prices are not favorable); and 3) may or may not contribute to regional energy supply that exceeds customer demand.

Incorporating a more robust IRP planning methodology that evaluates utility load resource balance at an hourly level, through probabilistic modeling rather than a single on- and off-peak average, will better identify the frequency, duration, and magnitude of potential energy and capacity surpluses, deficits, and risks the District may face across multiple time horizons. This will better inform best fit candidate resource portfolios that are resilient in meeting a range of forecast future needs.

ACRONYM REFERENCE TABLE

ACRONYM	DESCRIPTOR
AARG	Average Annual Rate of Growth
aMW	Average Megawatt
BPA	Bonneville Power Administration
CCA	Climate Commitment Act
CEAP	Clean Energy Action Plan
CEIP	Clean Energy Implementation Plan
CETA	Clean Energy Transformation Act
CPA	Conservation Potential Assessment
DER	Distributed Energy Resource
DOE	Department of Energy
FCRPS	Federal Columbia River Power System
GW	Gigawatt
I-937	Washington State's Energy Independence Act
IIJA	Infrastructure Investment and Jobs Act
IRP	Integrated Resource Plan
LRE	Load Responsible Entity
Mid-C	Mid-Columbia
MMBtu	Metric Million British Thermal Unit
MW	Megawatt
NERC	North American Electric Reliability Corporation
NWPP	Northwest Power Pool
NYMEX	New York Mercantile Exchange
PNW	Pacific Northwest
PUD	Public Utility District
PURPA	Public Utility Regulatory Policies Act
RCW	Revised Code of Washington
REC	Renewable Energy Credit
RMAC	Risk Management Advisory Committee
RPS	Renewable Portfolio Standard
SMR	Small Modular Reactor
TEA	The Energy Authority
TRL	Total Retail Load
UAMPS	Utah Associated Municipal Power Systems
WECC	Western Electricity Coordinating Council
WM	Wood McKenzie
WPP	Western Power Pool
WRAP	Western Resource Adequacy Program